

# The Dawn of Measurement Science Civilization in Ancient Egypt

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**Abstract:** The generation and development of science is not achieved overnight, after a long time of civilization brewing, formation, we read “the course of Science” (second edition) just a little glimpse of the dawn of civilization, let us into this ray of dawn, dispelling the fog, reveal the true meaning of science.

**Keywords:** Science; Ancient Egypt; Paper toilet paper; The pyramid

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## 1. Statement

The Course of Science (second edition) by Wu Guosheng, Peking University Press, 2002. Although it was published early, it is of great research value in the introduction of scientific history and new ideas. Especially for science students to understand the historical development process of science, arts students to learn the basic scientific knowledge, on the basis of drawing lessons from foreign advanced experience, made a more clear and in-depth exposition.

The progress and generation of science has gone through thousands of years of efforts and evolution. Francis Bacon, a famous British philosopher, told us that knowledge is power and reading history makes people wise. We not only understand the importance of knowledge, but also understand how to obtain knowledge. Therefore, the combination of history and theory has become the basic principle of popularizing scientific knowledge. Is science a systematic form of natural knowledge, a productive force or a social activity? This is more of a matter of opinion. Just like when Evolution was particularly popular, Huxley answered the questions of Archbishop Wilberforce of Oxford. Although Huxley stood on the vantage point of maintaining evolution and asked the archbishop’s sarcasm, from the perspective of objective facts, the archbishop’s questioning is not the driving force to promote scientific progress. Even if evolution is proven to be science, it allows people to question it and solve puzzles before it can be called true science. True science is knowledge that can stand the test of time, stand the test of gossip, stand countless arguments.

When the paleolithic to the neolithic transition, the history of civilization gradually opened the prelude. That is, around 10,000 BC, the agricultural society began in earnest. The east had the four earliest ancient civilizations.

## 2. This paper

I’m going to focus on ancient Egypt. According to Herodotus, the Greek historian, the frequent flooding of the Nile caused the Egyptians to constantly re-measure their land, which led to the creation and progress of ancient Egyptian geometry. They even created a table of numbers that can figure out exactly how to split fractions, in order to make the four mixed calculations more precise. And because the algorithm was so complicated, later scholars even thought that it hindered the progress of ancient Egyptian mathematics.

Papyrus was made in ancient Egypt around 1400 BC, during the New Kingdom period. Because of papyrus, recording became more popular, but the fact is that it can’t be produced for a short time, it still played a huge role. The 17-meter-long papyrus contains hymns, religious and funerary texts, placed in the dead man’s grave to help him overcome the dangers of “the underworld.” Why is it written on papyrus? It is closely related to the religious belief and worship in ancient Greece. They believe in using this mysterious religious mantra and praise god after death, to protect themselves in the underworld, and may be able to return to the world in daylight. These magical symbols, though of particularly mysterious origin, have a more direct meaning: the dead wish to have their help in the afterlife, and for this to work, the papyrus book of the dead needs to be written and placed in the tomb. At the same time, but also to avoid the destruction of bad attempts. Here again, there is an inevitable collision with computation. How to place the tomb, calculate the size of the tomb, the construction materials, even the papyrus where to place the tomb to avoid damage or loss? What is more, the distance to the afterlife must be calculated precisely in order to arrange for the dead to walk out of the land of Duat. Because the gods they believed in needed to have a separate dwelling, and the gods were inseparable from the constellations, the construction of the temple was also very important. How to build a large and magnificent temple is inseparable from a huge amount of calculation. We have to admire the wisdom of the ancient Egyptians, or rather, we should be more praised in their adherence to the faithful belief in God, as the spiritual premise to carry out various practical activities. This kind of spiritual worship seems to have been scientifically verified in the early stage of many primitive civilizations. Early ancestors even in their ignorant state maintained extremely profound and unconditional belief in the gods. But this belief in god has led to something more creative and influential in reality -- science. Or perhaps we can speculate that there was no clear separation between early science and gods. More science is clouded by worship of

gods, making it hard to tell whether it is science or superstition.

As such, we should also see ancient Egypt's more worthy pyramids. Especially the tomb of The Fourth Dynasty pharaoh Hoover. The famous Sphinx, 146.5 meters high and 240 meters wide at its base, was made of 2.3 million carefully polished stones and took more than 100,000 people to complete over 30 years. There is an entrance in the north center of the tower, and the passage from the entrance to the underground palace is at a 30 degree Angle to the horizon, facing the North Star at that time. There was a lot of math involved in measuring the height of the Sphinx, the width of its base, how many blocks were needed, and how big should each block be? How to leave the entrance so that the Angle between the passage and the horizon is exactly 30 degrees, corresponding to the North Star? I think the great significance of this tomb, the largest one in existence, is not just its size, but how did you build it? How do you arrange people? In a hot climate, how to ensure adequate labor participation? How to conduct on site to ensure that the construction results are in line with expectations. Despite the great architecture presented to the world today, we can see from the exterior of the building that it contains numerous mathematical calculations and the application of measurement formulas, which laid the foundation for the birth of other buildings in the future.

### 3. The conclusion

The dawn of ancient Egyptian civilization not only belongs to ancient Egypt, but also belongs to all mankind, which means that human beings continue to explore nature, conquer and transform nature and achieve success, and then leave rich gifts for later generations.

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